R & D facts

U.S. Department of Energy
Office of Fossil Energy
National Energy Technology Laboratory

Office of Research and Development

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Collaborations Through Cooperative Research and Development Agreements and Contributed Funds in Agreements

Background

A Cooperative Research and Development Agreement (CRADA) is one way universities and private sector companies can collaborate with government-funded researchers in the National Energy Technology Laboratory's (NETL) Office of Research and Development (ORD) on projects related to fundamental and applied fossil energy research and development. NETL is the only Department of Energy national laboratory owned and operated by the government, and the only one devoted to fossil energy research.

A CRADA is an efficient mechanism for universities and the private sector to advance their scientific and technology interests by working with researchers at NETL. The authority for a national laboratory to enter into a CRADA was established by Federal law, which also offers the CRADA partners a way to protect the intellectual property that comes from the cooperative R&D effort.

A CRADA is an R&D agreement in which public and private entities agree to collaborate on a mutually beneficial project. Each of the parties contributes its own resources to complete its portion of the work. No government funds support the private sector party's work, but the private sector partner is able to fully or partially fund the government's effort.

Researchers in the Office of Research and Development at the Department of Energy's National Energy Technology Laboratory, review plans for process and device scale modeling for FutureGen-type power plants. Researchers, from left, are Shaoping Shi, Dave Huckaby, Chris Guenther, Bill Rogers, Rand Batchelder, Emily Taylor, and Mehrdad Shahnam.

CRADAs provide mutual benefits in several ways:

- Participants can negotiate intellectual property disposition, such as rights to patents, protection of information, and exclusive or non-exclusive licensing of inventions
- The private sector participant can take advantage of NETL's unique state-of-art facilities and capabilities
- NETL and the private sector have the opportunity to develop relationships

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A successful CRADA benefits all partners. NETL seeks CRADA partnerships that align with its mission of solving national energy and environmental problems and that fall under ORD's Focus Areas: Computational and Basic Sciences, Energy System Dynamics, Materials Science, and Geological and Environmental Systems.

NETL gives preference to partners whose business units are located in the United States and who agree that products resulting from the CRADA will be manufactured substantially in the United States. If the potential partner is part of a foreign-owned company, NETL will consider how that country deals with U.S.-based companies.

Also considered in the formation of a CRADA are:

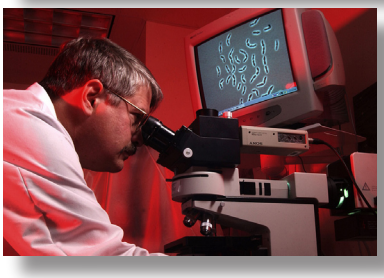
- The resources offered by the proposed participant
- NETL's resource availability
- The specific contribution of the project to NETL's R&D program

A potential partner who would like to initiate a CRADA should send a letter or email expressing interest to NETL's Technology Transfer Manager. The expression of interest triggers discussions within NETL and between NETL and the potential participant to decide whether NETL and the participant can define a project that will benefit both parties, and to determine if the needed resources are available to perform the work.

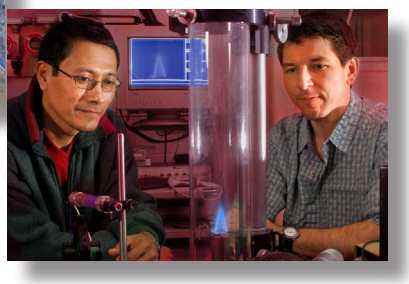
The NETL Director makes the final decision about whether NETL will pursue a CRADA opportunity. No funds are transferred from NETL to the private sector participant so most regulations governing Federal procurements do not apply. As a result, CRADAs can usually be implemented quickly and with few complications.

NETL also has available a Contributed Funds in Agreement (CFA) which is a way for NETL to perform work for a nonfederal sponsor. The work must draw on the unique capabilities of NETL and not place NETL in competition with the private sector. The work would be performed on a time schedule that does not interfere with the primary mission related projects. The protection of generated information and the rights to intellectual property is negotiable. The use of CFAs encourages full cost recovery.

Jeol 7000F Scanning Electron Microscope with secondary and backscatter detectors, integrated Oxford energy and wavelength dispersive x-ray spectrometers and electron backscatter diffraction, and cathode luminescence.



Hank Edenborn, a research microbiologist in the Office of Research and Development's Geosciences Division at the National Energy Technology Laboratory, examines microscopic bacteria isolated from contaminated soil. These bacteria are being used to develop biosensors capable of detecting low concentrations of environmental pollutants generated by power plants.



Eduardo Perez, a doctoral student from West Virginia University, and Don Ferguson, a researcher in the Office of Research and Development at the Department of Energy's National Energy Technology Laboratory, use simplified combustion geometries such as the one pictured in order to control and separate the influences of different physical mechanisms that cause combustion instabilities. The goal of this research in NETL's Energy System Dynamics Division is to improve modeling capabilities of combustion dynamics and provide better understanding of how fuel composition influences dynamic response in pre-mixed gas turbine combustion systems. The flame they are observing is imaged on the computer monitor behind them.